

CLAIMS

1. An imaging system for a user, comprising:

a mask adapted to be worn by a user which covers at least the eyes of said user and

5 has a viewing area covered by a faceplate;

an imaging subsystem mounted in fixed relation to said mask adjacent said faceplate,

said imaging subsystem adapted to capture images positioned in the viewing  
area covered by said faceplate; and

an image storage system positioned outside said mask capable of storing said images,

10 said image storage system being in close proximity to said user and  
operatively connected to said imaging subsystem by wireless communication.

2. The imaging system as claimed in claim 1 wherein said mask is a diving mask.

3. The imaging system as claimed in claim 1 wherein said image subsystem is  
adapted to follow head movements of said user.

4. The imaging system as claimed in claim 1 wherein said imaging subsystem  
includes a camera capable of capturing images using imaging techniques selecting from the  
group consisting of analog, digital, infrared, laser, and a combination of said imaging  
techniques.

5. The imaging system as claimed in claim 4 wherein said imaging subsystem  
20 includes a camera selected from the group consisting of video camera and still-picture  
camera.

6. The imaging system as claimed in claim 1 wherein:

said imaging subsystem includes a camera;

said imaging system further comprises an imaging subsystem control unit adapted to  
25 control said imaging subsystem using wireless communication, said imaging  
subsystem control unit adapted to be mounted on a body part of said user,  
mounted on equipment carried by said user, or integrated with equipment  
carried by said user; and

said imaging subsystem control unit includes a control switch adapted to perform one  
30 of starting video image capture and taking a still-picture.

7. The imaging system as claimed in claim 6 wherein said imaging subsystem control unit is integral with a wrist-mounted dive computer and further includes a control switch adapted to end a video capture which is in progress.

8. The imaging system as claimed in claim 6 wherein said imaging subsystem control unit further includes at least one control switch adapted to turn at least part of said imaging system on and off by wireless command.

9. The imaging system as claimed in claim 1 wherein:

said imaging subsystem includes a wireless transmitter for transmitting said images to  
said image storage system by wireless communication; and  
said image storage system includes a wireless receiver capable of receiving said  
images from said imaging subsystem by wireless communication.

10. The imaging system as claimed in claim 9 wherein said image storage system includes:

a video compression unit operatively connected to said wireless receiver and capable  
of compressing said images into compressed images; and  
an image storage subsystem operatively connected to said video compression unit and  
capable of storing said compressed images.

11. The imaging system as claimed in claim 1 wherein:

said imaging subsystem includes a second wireless receiver; and  
said image storage system includes a second wireless transmitter capable of  
transmitting control signals to said second wireless receiver by wireless  
communication, said control signals including a first signal to turn said  
imaging subsystem on and off and a second signal to start and end an video  
image processing or take a still-picture.

25 12. The imaging system as claimed in claim 1 wherein said image storage system  
is adapted for mounting on a body part of said user, mounting on equipment carried by said  
user, or insertion into a pocket of a buoyancy control device vest worn by said user.

13. The imaging system as claimed in claim 1 wherein said imaging system  
further comprises:

30 a first power supply that provides power to said image storage system; and  
a second power supply distinct from said first power supply, that provides power to  
said imaging subsystem.

14. The imaging system as claimed in claim 13 wherein:  
said first power supply includes a first solar device for generating solar power.

15. The imaging system as claimed in claim 1 further including:  
a liquid crystal display (LCD) mounted inside said mask and in fixed relation to said  
5 faceplate, said LCD capable of displaying said images for viewing by said  
user.

16. The imaging system as claimed in claim 1 further including a fisheye lens  
mounted in front of said imaging subsystem, wherein said imaging subsystem is adapted to  
capture fisheye images using said fisheye lens.

10 17. An imaging system, comprising:  
a diving mask adapted to be worn by a user which covers at least the eyes of said user  
and has a viewing area covered by a faceplate;  
an imaging subsystem mounted in fixed relation to said diving mask adjacent said  
faceplate, said imaging subsystem adapted to capture images positioned in  
front of said faceplate and to follow head movements of said user, said  
imaging subsystem including  
20 a camera capable of capturing images using imaging techniques  
selecting from the group consisting of analog, digital, infrared,  
laser, and a combination of said imaging techniques, said  
camera is selected from the group consisting of video camera  
and still-picture camera, and  
a wireless transmitter for transmitting said images by wireless  
communication; and

25 an image storage system positioned outside said diving mask capable of storing said  
images, said image storage system being carried by said user and operatively  
connected to said imaging subsystem by wireless communication, said  
wireless communication including at least one of radio frequency  
communication, infrared communication, acoustic communication, laser light  
communication, and visible light communication, said image storage system  
30 including

a wireless receiver capable of receiving said images from said wireless  
transmitter by wireless communication, and

an image storage subsystem operatively connected to said wireless receiver and capable of storing said images, said image storage subsystem including a memory system selected from the group consisting of solid state memories, optical disk storage, laser disk storage, computer disk storage, and mini-video tape storage.

18. A method for wireless imaging, comprising:

providing a mask adapted to be worn by a user which covers at least the eyes of said user and has a viewing area covered by a faceplate;

10 capturing images positioned in front of said faceplate using an imaging subsystem; and

transmitting by wireless communication said images to an image storage system capable of storing said images, said image storage system being positioned outside said mask and in close proximity to said user.

15 19. The method as claimed in claim 18 wherein transmitting by wireless communication said images to an image storage system includes:

transmitting said images to a wireless receiver associated with the image storage system;

20 compressing said images into compressed images using a video compression unit operatively connected to said wireless receiver; and

storing said compressed images using said image storage subsystem.

20. The method as claimed in claim 19 wherein storing said images using an image storage subsystem includes storing images using a solid state memory system.

25 21. The method as claimed in claim 18 further comprising storing images in a storage device adapted for location within a pocket of a buoyancy control device worn by the user.

22. The method as claimed in claim 18 further including displaying said images on a liquid crystal display (LCD) for viewing by said user, wherein said LCD is mounted inside said mask and in fixed relation to said faceplate.

30 23. A method for wireless imaging, comprising:

providing a diving mask adapted to be worn by a user which covers at least the eyes of said user and has a viewing area covered by a faceplate;

capturing images positioned in front of said faceplate using an imaging subsystem,  
said imaging system adapted to follow head movements of said user, said  
imaging subsystem uses a camera capable of capturing images using imaging  
techniques selecting from the group consisting of analog, digital, infrared,  
laser, and a combination of said imaging techniques, said camera selected from  
the group consisting of video camera and still-picture camera;

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transmitting said images to an image storage system positioned outside said mask and  
in close proximity to said user by wireless communication using a wireless  
transmitter and a wireless receiver, the wireless receiver capable of receiving  
10 said images from said imaging subsystem, said image storage system being  
carried by said user and including an image storage subsystem operatively  
connected to said wireless receiver, and said wireless communication using  
communication techniques selected from the group consisting of radio  
frequency communication, infrared communication, acoustic communication,  
laser light communication, visible light communication, and a combination of  
said communication techniques; and

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storing said images in a memory of said image storage subsystem where the memory  
includes at least one memory device selected from the group of solid state  
memories, optical disk storage, laser disk storage, computer disk storage, and  
mini-video tape storage.

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